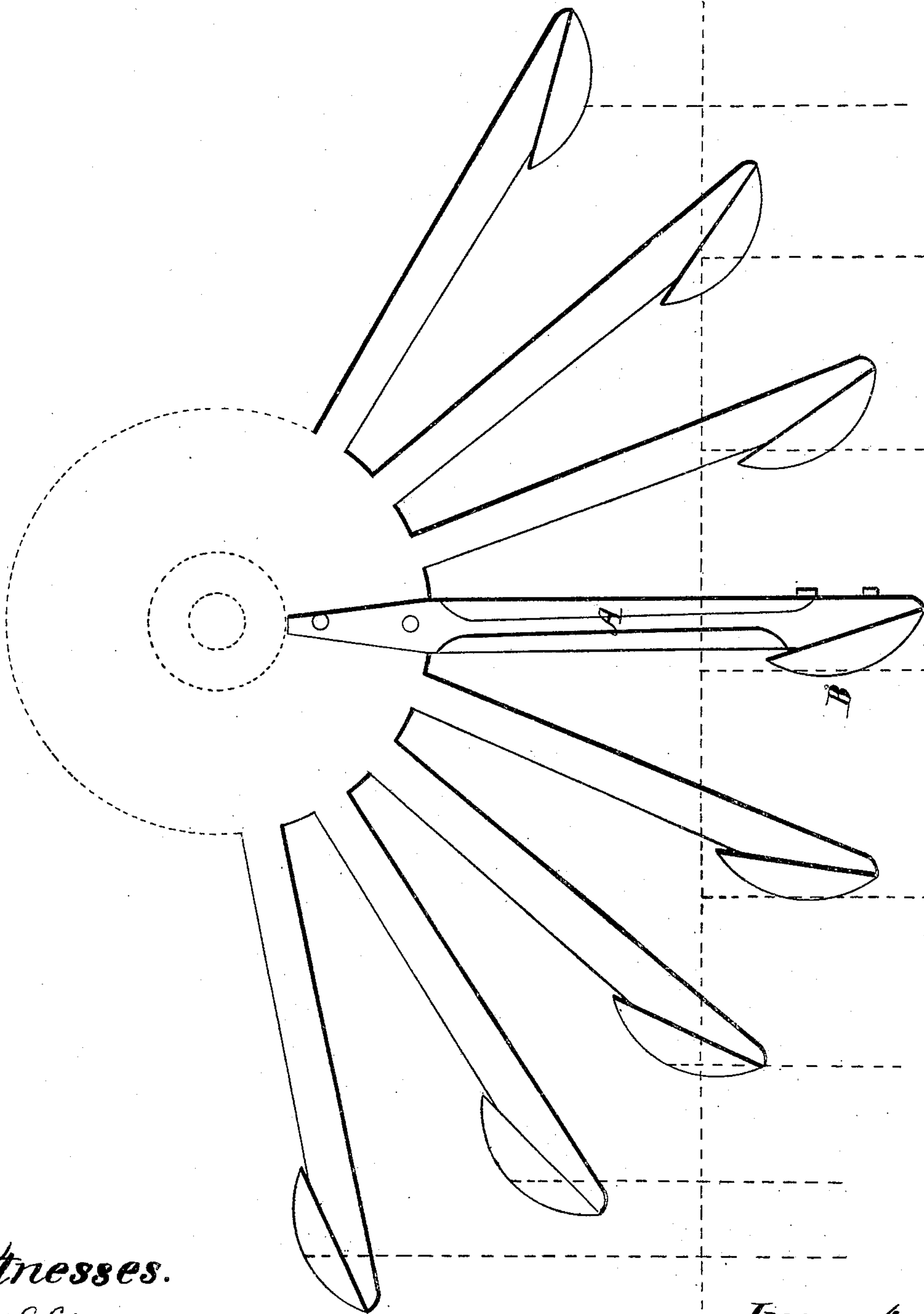


E. Banks.
Paddle Wheel.

N^o 60,988.

Patented Jan. 8, 1867.



Witnesses.

John S. Lewis
Charles Kitchum

Inventor.
Eli Banks

UNITED STATES PATENT OFFICE.

ELI BANKS, OF MILLPORT, NEW YORK.

IMPROVED PADDLE-WHEEL.

Specification forming part of Letters Patent No. 60,988, dated January 8, 1867.

To all whom it may concern:

Be it known that I, ELI BANKS, of Millport, in the county of Chemung and State of New York, have invented a new and useful Improvement in Paddle-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, in which the figure shows the end of the paddle and the spoke that supports it.

The nature of my invention consists in making a paddle that performs its duty under all circumstances with uniformity, and when submerged at various depths its effective force will not vary as much as other paddles, and when used in rough water or on long voyages, where the draft of the ship is changed by the consumption of fuel, as with ocean steamers, my paddle will retain its effective force with more uniformity, if they are properly applied to the vessel.

By means of the curved face of the paddles the percussion is less when the paddle enters the water, and the lifting of the water is less when the paddle comes out of the water, while the propelling power is the same, or not diminished. The propelling power may be increased without increasing the percussion or lifting of the water by making the paddles larger or placing them lower in the water.

A is the spoke of the wheel, of ordinary construction, except at the periphery end, where the edge that receives the paddle is made at an obtuse angle with the forward edge of the spoke, as shown in the figure. The position of the paddle may be given by other means, as by placing a wedge between the spoke and paddle. The end of the spoke is

thus made so as to allow the paddle to be made with less amount of labor, and have it held in its proper and most effective position.

B is the paddle. The back surface is made to fit upon the ends of the spokes, as shown in the figure. The forward surface is made semi-cylindrical, elliptical, or any other curve that may be required, as practical use will determine the best curve for the various kinds of vessels to which wheels of this construction may be applied. The size or dimension of the paddle will be determined in the same manner. The paddle is securely fastened to the angular ends of the spokes, as shown in the figure. If metallic paddles are made for the same purpose, the hind surface would nearly correspond with the forward surface, in which case the end of the spokes should be made to correspond and give the proper position to the forward surface.

The red lines in the figure show the various positions of the paddles when going into and coming out of the water, and their position while under water—the dotted line the surface of the water, and the other dotted lines are at right angles to the water-line, and are made to illustrate the principles involved in the application of my invention to the propulsion of vessels by steam upon water.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the spoke A and the paddle B, when made as described, and used for the purpose set forth.

ELI BANKS.

Witnesses:

JOHN L. LEWIS,
CHARLES KETCHUM.